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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

LUK, EMMANUEL S

ART UNIT

PAPER NUMBER

1722

DATE MAILED: 12/12/2002

12

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/553,807

Applicant(s)

THOMAS, RONALD

Examiner

Emmanuel S. Luk

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 23 October 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1 and 3-13 is/are pending in the application.
- 4a) Of the above claim(s) 12 and 13 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1 and 3-12 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Election/Restrictions***

1. Newly submitted claims 12 and 13 are directed to an invention that is independent or distinct from the invention originally claimed for the following reasons: The apparatus claims 1-11 can use another materially different process that do not activate an electromagnetic actuator to provide magnetic force on the pin.

Since applicant has received an action on the merits for the originally presented invention, this invention has been constructively elected by original presentation for prosecution on the merits. Accordingly, claims 12 and 13 are withdrawn from consideration as being directed to a non-elected invention. See 37 CFR 1.142(b) and MPEP § 821.03.

### ***Specification***

2. The amendment to the specification dated 9/3/02 was not entered because it did not specify where the new text was to be entered in the original specification. Applicants need to further provide where the submitted specification changes are to be corrected in the specification.

### ***Claim Rejections - 35 USC § 112***

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 1, 7 and 11 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claims 1 and 7, the terms "at least partially within" and "substantially blocking" are indefinite terms. It is not clear what degree the Applicants claim.

In claim 11, the term "substantially blocking" is indefinite. It is not clear what degree the Applicants claim.

### ***Claim Rejections - 35 USC § 102***

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claim 11 is rejected under 35 U.S.C. 102(b) as being anticipated by Daniels et al.

Daniels teaches a hollow passage (82) having distal end for connecting a pressurized fluid supply (Fig. 8) to the interior of the chamber (26), a pin (34) extending through the passage and reciprocal between an extended position (Fig. 5) and a retracted position (Fig. 4), said first end blocking the passage when the pin is in its retracted position (Fig. 4) and the surface that contacts the walls of the passageway matingly receive and acts as a first pressure surface, an actuator (36) operably coupled to the second end of the pin and reciprocating the pin in cooperation with a fluid pressure at the pressure surface. The cylinder can be either hydraulic, pneumatic, or any other type of cylinder (Col. 3, lines 1-2) and the second end of the pin having a second pressure surface as it extends into contact with the cylinder.

***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

8. Claim 1, 3 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Daniels et al in view of Carroll.

Daniels teaches a hollow passage (82) having distal end for connecting a pressurized fluid supply (Fig. 8) to the interior of the chamber (26), a pin (34) extending through the passage and reciprocal between an extended position (Fig. 5) and a retracted position (Fig. 4), the distal end being at least partially within and substantially blocking the passage when the pin is in its retracted position (Fig. 4), an actuator (36) operably coupled to the second end of the pin and reciprocating the pin in cooperation with a fluid pressure at the pressure surface. The cylinder can be either hydraulic, pneumatic, or any other type of cylinder (Col. 3, lines 1-2). The distal end of Daniels

being enlarged at the tip for covering the passageway (78) such that it cuts off the flow when in the retracted position (Fig. 4).

Daniels fails to teach the pin having an enlarged distal portion extending beyond the distal end of the passage and biasing means.

Carroll teaches poppet valves (30) that enter into the cavity, the valve having enlarged distal ends extending beyond the distal end of the passage. Carroll also teaches springs (33) for biasing the pins toward the retracted position.

It would have been obvious to one of ordinary skill in the art to modify Daniels with an enlarged distal end and biasing means as taught by Carroll because it allows for an improved seal of the passageway in the retracted position of the pins.

9. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Daniels in view of Carroll as applied to claims 1, 3 and 5 above, and further in view of Denne.

Daniels fails to teach an electromagnetic actuator.

However, Daniels claims a cylinder comprising of a hydraulic, pneumatic or another other type for actuating the pin. An electromagnetic actuator is known in the art as shown by Denne who teaches an electromagnetic apparatus (Col. 1, lines 31-39) which drives a piston (90) so that it produces a linear motion (Col. 1, lines 5-6) on the piston.

Thus, an electromagnetic actuator would have been obvious to one of ordinary skill in the art to modify Carroll with the substitution of an electromagnetic actuator as

taught by Denne to drive the pin because it is an actuator that is capable of providing control and precision missing from pneumatic actuators (Col. 2, lines 1-7).

10. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Daniels in view of Carroll as applied to claims 1, 3 and 5 above, and further in view of Terao.

Daniels fails to teach a ball screw drive for reciprocating the pin.

Terao discloses that in related arts of actuator systems, the electric motor is directly coupled to the ball screw. The piston rod is connected to the ball screw and the drive shaft of the electro motor (Col. 2, lines 2-6). Furthermore, the ball screw shaft (22) engages the piston (20) while an electric motor (26) drives the ball screw shaft (Col. 2, lines 34-36).

The use of a ball screw drive for reciprocating a piston or pin is well known in the actuator arts and it would have been obvious to one of ordinary skill in the art to modify Daniels with the substitution of a ball screw drive as taught by Terao as drives for reciprocating the pin because it is a well known alternative drive means for reciprocating movement.

11. Claims 7 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Daniels et al in view of Denne.

Daniels teaches a hollow passage (82) having distal end for connecting a pressurized fluid supply (Fig. 8) to the interior of the chamber (26), a pin (34) extending through the passage and reciprocal between an extended position (Fig. 5) and a

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retracted position (Fig. 4), said enlarged distal end being at least partially within and substantially blocking the passage when the pin is in its retracted position (Fig. 4), an actuator (36) operably coupled to the second end of the pin and reciprocating the pin in cooperation with a fluid pressure at the pressure surface. The cylinder can be either hydraulic, pneumatic, or any other type of cylinder (Col. 3, lines 1-2).

Daniels fails to teach an electronic actuator and controller.

However, Daniels claims a cylinder comprising of a hydraulic, pneumatic or another other type for actuating the pin. An electromagnetic actuator is known in the art as shown by Denne who teaches an electromagnetic apparatus (Col. 1, lines 31-39) which drives a piston (90) so that it produces a linear motion (Col. 1, lines 5-6) on the piston.

Thus, an electromagnetic actuator would have been obvious to one of ordinary skill in the art to modify Carroll with the substitution of an electronic actuator as taught by Denne to drive the pin because it is an actuator that is capable of providing control and precision missing from pneumatic actuators (Col. 2, lines 1-7).

12. Claims 9 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Daniels et al in view of Denne as applied to claims 7 and 8 above, and further in view of Carroll.

Daniels fails to teach a tapered inner diameter at its distal end and the enlarged portion of the pin has a substantially mating tapered contour, and mean for biasing the pin.



Carroll teaches poppet valves (30) that enter into the cavity, the valve having enlarged distal ends extending beyond the distal end of the passage with tapered inner diameters that have a mating tapered contour (Fig. 1A; 3). Carroll also teaches springs (33) for biasing the pins toward the retracted position.

It would have been obvious to one of ordinary skill in the art to modify Daniels with the enlarged distal end having a tapered inner diameter and biasing means as taught by Carroll because it allows for an improved seal of the passageway in the retracted position of the pins.

### ***Response to Arguments***

13. Applicant's arguments with respect to claims 1-10 have been considered but are moot in view of the new ground(s) of rejection. Daniels teaches a pin having an enlarged distal end with a pressure surface that contacts the walls of the passageway and having an actuator coupled to the pin, reciprocating the pin in cooperation with the pressurized fluid.

### ***Conclusion***

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Emmanuel S. Luk whose telephone number is (703) 305-1558. The examiner can normally be reached on Monday through Friday 8 to 4.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jan S. Silbaugh can be reached on (703) 308-3829. The fax phone

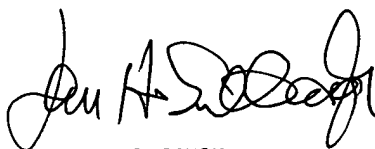
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numbers for the organization where this application or proceeding is assigned are (703) 872-9310 for regular communications and (703) 872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0651.

E. L.  
December 10, 2002

  
JAN H. SILBAUGH  
SUPERVISORY PATENT EXAMINER  
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12/11/02